

mass index  $>30 \text{ kg/m}^2$ ), 70% binge eaters, received three weekly sessions of group Behavioural Weight Loss (BWL) and then were randomised to 8 sessions of individual CRT-O or to a no-treatment control group. Mixed-effects model analyses revealed that the CRT-O group had a significant improvement in executive function at post-treatment and 3-month follow-up compared to the control group (Cohen's  $d=0.96$  to  $2.1$ ). 68% of those in the CRT-O group achieved a weight loss of 5% or more at follow-up compared to only 15% of the controls. Individuals in the CRT-O group lost on average 6.6% of the weight at 3 month follow up (Cohen's  $d=1.4$ ). Changes in executive function predicted changes in weight ( $p < .05$ ). Binge eating reduced in the CRT-O group compared to the control (Cohen's  $d=0.80$ ). CRT-O seems to be a promising treatment for obesity and binge eating. CRT-O studies with longer follow-ups, pairing it with longer BWL programs and examining the mechanisms are currently underway in Australia and Germany.

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8

#### Invited talk: Interactions between insulin resistance and bone health



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The contribution of insulin resistance vs. adiposity in determining bone mineral density (BMD), bone turnover and fracture risk in humans remains unclear. Bone mineral density (BMD) predicts fracture risk, and obesity is associated with higher BMD. People with both type 1 and type 2 diabetes have increased fracture risk, despite many people with type 2 diabetes being overweight or obese, with normal BMD. Factors that contribute to increased fracture risk in diabetes are insulin use, increased risk of falls due to neuropathy and retinopathy, inflammation, glycation of collagen, use of PPAR- $\gamma$  agonists and poor bone quality related to poor nutrition. Fracture risk in diabetes does not appear to be associated with BMD, and so must occur at a cellular level.

Bone turnover markers are lower in people with the metabolic syndrome, and in diabetes, and is associated with insulin resistance rather than adiposity.

This talk will review published data looking at fracture rates and bone turnover marker levels in people with obesity, insulin resistance and dia-

betes. Data will be presented from studies looking at bone turnover markers performed locally. These data suggest that increased visceral adiposity and higher fasting insulin levels in insulin-resistant states is associated with lower fasting OC and CTx, and failure to further suppress with more insulin. This raises the possibility that diabetic osteopathy may be considered another complication of diabetes.

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9

#### Invited talk: Is the increased exposure to antidepressants a key contributor to the obesity pandemic?



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Major depressive disorder (MDD) and obesity are both common heterogeneous disorders with complex aetiology, with a major impact on public health. Antidepressant prescribing has risen nearly 400% since 1988. In parallel, adult obesity rates have doubled since 1980, from 15 to 30%, while childhood obesity rates have more than tripled. Are these two facts related? Despite the concomitant rise of antidepressant use and of the obesity rates in Western societies, the association between the two, as well as the mechanisms underlying antidepressant-induced weight gain, remain under explored. Our recently developed animal paradigm shows that the combination of stress and antidepressants followed by long-term high-fat diet results, long after discontinuation of antidepressant treatment, in markedly increased weight, in excess of what is caused by high-fat diet alone. On the basis of existing epidemiological, clinical and preclinical data, we have generated the testable hypothesis that escalating use of antidepressants, resulting in high rates of antidepressant exposure, might be a major contributory factor to the obesity epidemic, particularly in Western countries.

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